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09/657,314	09/07/2000	Hans-Joachim Rudolf	6039-000277	1729

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EXAMINER
SHIPSIDES, GEOFFREY P

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/657,314	Applicant(s) RUDOLF, HANS-JOACHIM	
	Examiner Geoffrey P. Shipsides	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 11-31* is/are pending in the application.

4a) Of the above claim(s) *1-4 and 11-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-31* is/are rejected.

7)☒ Claim(s) *25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. It appears from the amendment filed 5-21-03 that the applicant intended to cancel claim 25, but due to a typo cancelled withdrawn claim 5, as amended claim 22 now includes all of the limitations of claim 25.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent No. DE 41 09 385 A1 (Kiefel) in view of U.S. Patent No. 3,835,209 (Karabedian), U.S. Patent No. 5,281,375 (Konermann), and admitted prior art in the instant specification on pages 1-5 (Admission).

Kiefel teaches a device for controlling the thickness profile in the production of a blown film (abstract, line 9). Kiefel teaches an air-cooling ring for the segmental cooling of blown film that has metering valves and is controlled (derwent title). From figure 1 it

is clear that the apparatus includes a blow head, a main cooling ring (20) and an additional cooling ring (30) that is placed between the blow head and the main cooling ring, arranged at the blow head of the blown film extruder underneath and in the direction of production before the main cooling ring. Figure 2 shows that the additional cooling ring is a segmented disk that supplies separate flows of air streams controlled by a system of valves. The USE/ADVANTAGE section of the Derwent Abstract teaches that Kiefel teaches the use of this apparatus for controlling the thickness profile of the film. Although it is not clear from the figures or the Derwent Abstract if Kiefel teaches a measuring and controlling device scanning the thickness of the blown film above the freezing zone and controlling the additional air streams as a function of the measured blown film thicknesses, but it is the position of the examiner that Kiefel does teach this. The additional cooling ring of Kiefel is mounted directly at the exit of the film tube material where the latter emerges from an annular nozzle of the blow head. (See Figure 1). Kiefel teaches an additional cooling ring that is an independent element to the main cooling ring by teaching that the die ring can be inserted additionally to the usual main cooling ring, pre. Beneath it... the arrangement can easily be retro-fit (End of Derwent BASIC-ABSTRACT). Kiefel teaches separate blowers for each cooling ring (Figures). Kiefel includes valves to control the flow of air in the segmented cooling ring (Figure 2). Kiefel teaches at least one blower that supplies air to the additional cooling ring and the airflow to the various cooling segments of the additional cooling ring is controlled by a series of valves (Figure 2). Kiefel teaches that the additional cooling ring is such that the cover part with the planar counter face is formed directly by the main

cooling ring against which the additional cooling rests (Figure 1). It is clear that the air passages are grooves formed in the surface of the additional cooling ring that form air passages when pressed against the main cooling ring.

With regard to claims 22 and 25, Kiefel does not teach a main cooling ring that has annular nozzles, which are arranged in two different planes. Karabedian, however, teaches a cooling arrangement in a similar process of controlling the thickness of a blown film (Column 1, lines 5-6) that includes a cooling ring with multiple annular cooling nozzles in different planes (Figures 1 and 3). Karabedian teaches that the use of multiple independently controlled nozzles allows for a closely controlled process (Column 1, lines 63-68). It would have been obvious to one having ordinary skill in the art at the time of invention to modify the apparatus of Kiefel to have a main cooling ring that includes multiple independently controlled annular cooling nozzles as taught by Karabedian in order to more closely control the cooling process when using the apparatus of Kiefel. It is further noted that the multiple nozzles of Karabedian are fixed in section.

Even if Kiefel does not teach that a measuring and controlling device scanning the thickness of the blown film above the freezing zone and controlling the additional air streams as a function of the measured blown film thicknesses, Kiefel does teach that the air streams of the additional cooling ring in order to control the thickness of the blown film. Further, Konermann teaches a similar apparatus where a segmented controlled cooling ring is after (further downstream from) the main cooling ring, where the segmented controlled cooling ring is responsive to a measurements taken by optical

thickness sensors (11) that are arranged at intervals above additional cooling ring 3 on the circumference of the film bubble (Column 6, lines 51-60). Further Admission teaches that the process of controlling the airflow of a cooling ring is known in the art to be responsive to measuring and control devices. "As a rule, the measuring device is arranged in the direction of production behind a freezing region of the film material" (Page 2, lines 4-6 of the instant specification). So even if Kiefel does not teach the measurement and controlling device that takes measurements at a point above the freezing point of the extruded material and the use of the measurements to control the segmented additional cooling ring, it would have been obvious to one having ordinary skill in the art at the time of invention to provide a measurement and control device to control the segmented additional cooling ring of Kiefel with a measurement device taking a measurement at a point beyond the freezing point of the extruded material (as is taught by Admission) and to use this information to control the segmented additional cooling ring of Kiefel during the production of blown film.

With regard to claim 23, Kiefel teaches that the additional cooling ring is such that the cover part with the planar counter face is formed directly by the main cooling ring against which the additional cooling rests (Figure 1). It is clear that the air passages are grooves formed in the surface of the additional cooling ring that form air passages when pressed against the main cooling ring.

With regard to claim 24, Kiefel teaches that the additional cooling ring is such that the cover part with the planar counter face is formed directly by the main cooling ring against which the additional cooling rests (Figure 1). It is unclear if Kiefel teaches

that this is connected by bolting, but it is notoriously well known in the art to connect parts by bolting and it would have been obvious to one having ordinary skill in the art at the time of invention to connect the additional cooling ring to the main cooling ring by bolting in order to ensure that the cooling rings stay connected.

It would have been prima facie obvious at the time the invention was made to use an apparatus as described by Kiefel with the modification of a main cooling ring with multiple annular nozzles as taught by Karabedian in order to more closely control the film thickness.

4. Claims 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent No. DE 41 09 385 A1 (Kiefel) in view of U.S. Patent No. 3,835,209 (Karabedian), U.S. Patent No. 5,281,375 (Konermann), and admitted prior art in the instant specification on pages 1-5 (Admission) as applied to claims 6-10 and 22-25 above, and further in view of U.S. Patent No. 4,019,843 (Zimmermann) and U.S. Patent No. 5,576,029 (Planeta).

With regard to claims 26-30, Kiefel does not specifically teach the presence of an internal additional cooling ring. It is however well known in the art to provide internal cooling rings opposite to external cooling rings in the cooling of blown films. Zimmerman and Planeta, however, teach cooling systems in the cooling of blown films with internal cooling rings opposite to external cooling rings (see figures for each reference). It would have been obvious to one having ordinary skill in the art at the time of invention to proved an additional internal cooling ring as taught by both Zimmerman and Planeta in the apparatus of Kiefel opposite the external additional cooling ring in

order to more evenly cool the blow film on both sides of the film. It would have been further obvious to one having ordinary skill in the art at the time of invention to also control the cooling on the inside of the blow film in the same manner that the external additional cooling ring in order to better control the cooling process (and thus the film thickness) of the blown film.

5. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent No. DE 41 09 385 A1 (Kiefel) in view of U.S. Patent No. 3,835,209 (Karabedian), U.S. Patent No. 5,281,375 (Konermann), and admitted prior art in the instant specification on pages 1-5 (Admission).

Kiefel teaches a device for controlling the thickness profile in the production of a blown film (abstract, line 9). Kiefel teaches an air-cooling ring for the segmental cooling of blown film that has metering valves and is controlled (derwent title). From figure 1 it is clear that the apparatus includes a blow head, a main cooling ring (20) and an additional cooling ring (30) that is placed between the blow head and the main cooling ring, arranged at the blow head of the blown film extruder underneath and in the direction of production before the main cooling ring. Figure 2 shows that the additional cooling ring is a segmented disk that supplies separate flows of air streams controlled by a system of valves. The USE/ADVANTAGE section of the Derwent Abstract teaches that Kiefel teaches the use of this apparatus for controlling the thickness profile of the film. Although it is not clear from the figures or the Derwent Abstract if Kiefel teaches a measuring and controlling device scanning the thickness of the blown film above the freezing zone and controlling the additional air streams as a function of the measured

blown film thicknesses, but it is the position of the examiner that Kiefel does teach this. The additional cooling ring of Kiefel is mounted directly at the exit of the film tube material where the latter emerges from an annular nozzle of the blow head. (See Figure 1). Kiefel teaches an additional cooling ring that is an independent element to the main cooling ring by teaching that the die ring can be inserted additionally to the usual main cooling ring, pre. Beneath it... the arrangement can easily be retro-fit (End of Derwent BASIC-ABSTRACT). Kiefel teaches separate blowers for each cooling ring (Figures). Kiefel includes valves to control the flow of air in the segmented cooling ring (Figure 2). Kiefel teaches at least one blower that supplies air to the additional cooling ring and the airflow to the various cooling segments of the additional cooling ring is controlled by a series of valves (Figure 2). Kiefel teaches that the additional cooling ring is such that the cover part with the planar counter face is formed directly by the main cooling ring against which the additional cooling rests (Figure 1). It is clear that the air passages are grooves formed in the surface of the additional cooling ring that form air passages when pressed against the main cooling ring.

With regard to claim 31, Kiefel does not teach a second additional cooling ring Karabedian, however, teaches a cooling arrangement in a similar process of controlling the thickness of a blown film (Column 1, lines 5-6) that includes a multiple annular cooling nozzles (Figures 1 and 3). Karabedian teaches that the use of multiple independently controlled nozzles allows for a closely controlled process (Column 1, lines 63-68). It would have been obvious to one having ordinary skill in the art at the time of invention to modify the apparatus of Kiefel to include cooling means as taught by

Karabedian in order to more closely control the cooling process when using the apparatus of Kiefel. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the apparatus of Kiefel by simply adding extra additional cooling rings in order to simply the modification process. It would have been further obvious to one having ordinary skill in the art at the time of invention to supply any additional cooling rings with independent air supplying means and with independent control as taught by Karabedian in order to allow for independent control of each cooling means as taught by Karabedian in order to have a more closely controlled process when using the apparatus of Kiefel. The use of supply lines to provide air sources would also be an obvious apparatus arrangement as Kiefel and Karabedian teach the use of supply lines to provide air sources to the cooling rings and/or nozzles.

Even if Kiefel does not teach that a measuring and controlling device scanning the thickness of the blown film above the freezing zone and controlling the additional air streams as a function of the measured blown film thicknesses, Kiefel does teach that the air streams of the additional cooling ring in order to control the thickness of the blown film. Further, Konermann teaches a similar apparatus where a segmented controlled cooling ring is after (further downstream from) the main cooling ring, where the segmented controlled cooling ring is responsive to a measurements taken by optical thickness sensors (11) that are arranged at intervals above additional cooling ring 3 on the circumference of the film bubble (Column 6, lines 51-60). Further Admission teaches that the process of controlling the airflow of a cooling ring is known in the art to be responsive to measuring and control devices. "As a rule, the measuring device is

arranged in the direction of production behind a freezing region of the film material" (Page 2, lines 4-6 of the instant specification). So even if Kiefel does not teach the measurement and controlling device that takes measurements at a point above the freezing point of the extruded material and the use of the measurements to control the segmented additional cooling ring, it would have been obvious to one having ordinary skill in the art at the time of invention to provide a measurement and control device to control the segmented additional cooling ring of Kiefel with a measurement device taking a measurement at a point beyond the freezing point of the extruded material (as is taught by Admission) and to use this information to control the segmented additional cooling ring of Kiefel during the production of blown film.

It would have been prima facie obvious at the time the invention was made to use an apparatus as described by Kiefel with the modification of using a second (or more) additional cooling rings in order to provide extra independently controlled cooling means in order to more closely control the film thickness as is taught by Karabedian.

Response to Arguments

6. Applicant's arguments with respect to claims 22-24 and 26-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey P. Shipsides whose telephone number is 703-306-0311. The examiner can normally be reached on Monday - Friday 9 AM till 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 703-305-5493. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

GPS
Geoffrey P. Shipsides/gps
August 10, 2003

MARK EASHOO, PH.D
PRIMARY EXAMINER
Art Unit 1732
11 Aug 03